

# *Mortimer Demarest Leonard, Entomologist: Biographical Sketch and List of Publications*

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Mortimer Demarest Leonard's diverse and unconventional career spanned more than half a century, beginning as an undergraduate in 1909 during the glory years of entomology under J. H. Comstock at Cornell University and officially closing in 1961 near the end of an era of chlorinated hydrocarbon insecticides and during the early days of integrated pest management. He has been described as one of the best-known members of his profession (2); the reasons for his extraordinary visibility are many. Dr. Leonard's career took him into the study of insect systematics, biology, and distribution in which he edited the New York State list of insects, revised the dipterous family Rhagionidae, and published on immature stages of Hemiptera and aphid distribution; into extension entomology where he was a pioneer in establishing services for fruit growers; and into industry where he developed uses for numerous agricultural insecticides as one of the first entomologists to serve commercial interests. He worked for industry in nearly all regions of the country and abroad where he collaborated with hundreds of state, federal, and foreign workers. His outgoing personality and genuine interest in others won friends wherever he went.

My first association with Dr. Leonard came shortly after I began my graduate work at Cornell in 1966. He promptly identified a collection of aphids I had made and urged me to do additional collecting that might add data for the second supplement to his list of the aphids of New York State. Possibly because I was associated with his beloved Cornell, he took a special interest in my graduate career, encouraging me throughout in

correspondence from 1967 to 1971. I met Dr. Leonard just once, at the 43rd Annual Meeting, Eastern Branch, Entomological Society of America at Philadelphia in October 1971, shortly after I had finished my studies at Cornell. His encouragement and continued interest in my work prompted me to assemble more biographical material than space permitted Louise Russell to present in her excellent obituary written after Dr. Leonard's death in August 1975 (Russell 1975).

The preparation of this sketch and accompanying data was made easier for me because Dr. Leonard had maintained a partial list of his publications and had listed the species named in his honor, scientific societies to which he belonged, and the professional congresses he had attended. These personal items were given to Cornell University and were made available by L. L. Pechuman. I am also indebted to Donald D. Leonard, Mortimer's younger brother and former raw silk and yarn broker in New York City, for answering many of my questions about Dr. Leonard in a series of letters to me from November 1976 to April 1978. Much valuable information was available in letters by F. L. Campbell and J. S. Wade in recommending Leonard for membership in the prestigious Cosmos Club of Washington, D. C. C. P. Alexander provided details of his and Leonard's student years at Cornell. These sources have enabled me to discuss fully Leonard's fruitful career. I hope to avoid a mere sterile recording of his accomplishments but to capture some of his personality. To this end, the narrative is somewhat informal and anecdotal; at times I refer to Leonard affectionately

as "Mort" since this was how most of his friends and colleagues knew him.

#### The Making of a Naturalist

M. D. Leonard, born on June 23, 1890, grew up in the comfortable Brooklyn home of his talented parents, Mortimer Haight Leonard and Elizabeth Reid Demarest. His father, whose ancestors had come to New York City from England in the 18th century (3), attended family-interest businesses of banking and insurance and was active in amateur theatricals. His mother (Fig. 1), of Scotch-French Huguenot ancestry (3), was a well-known contralto soloist in New York City churches and oratorio and teacher and conductor of womens' choral societies (4).

City born and bred, young Mort attended neighborhood schools at 81st and 91st streets. He was able to enjoy outdoor activities at his parents' summer home in Ridgewood, New Jersey, a coun-

try place with swimming holes, brooks, and open fields where he collected butterflies and pointed out insects to his parents. Mort worked in the garden and on the one-acre grounds of their summer home. Never a robust youth, he did not hold any other jobs since his parents considered the physical work good for their son. Mort's father died in 1908 when Mort was in high school and his brother Donald was 12 years old. Mrs. Leonard was a remarkably capable person who assumed the duties of mother and father, including buying and selling property and building a permanent home in Ridgewood (4, 5).

In 1904 Leonard entered Chesire Academy near New Haven, Connecticut, where he met Louis Dunham, a student of nearly his own age who had a keen interest in birds. Together they spent much of their spare time in the nearby woods and fields observing birdlife. Mort soon learned "almost by heart and rather effortlessly, the identifying characters of

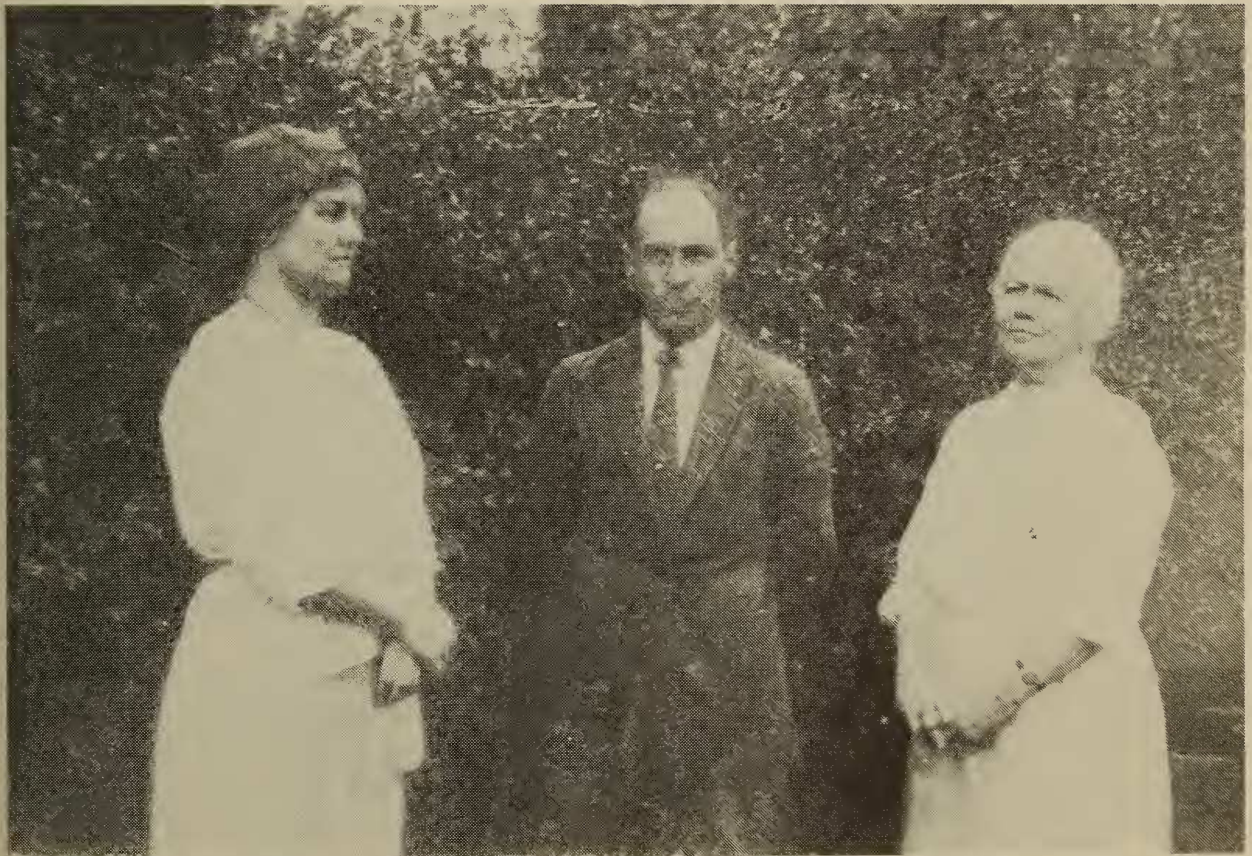


Fig. 1. M. D. Leonard with his wife, Doris Gardner Pratt (left), and his mother, Elizabeth Reid Demarest (right), ca. 1920. Courtesy of Donald D. Leonard

a great many of our Northeastern birds" (Leonard 1957).

*Entomological Father.*—After spending a year at Chesire, Leonard began to commute from Ridgewood to New York City's DeWitt Clinton High School, at the time this country's largest secondary school (ca. 2500 students) (6). Dr. George Washington Hunter, author of the most widely used textbook of high school biology, was head of the biology department; one of his staff members was the well-known student of Hemiptera, Harry G. Barber. By chance, Leonard was assigned to Barber's section of Botany and with his previous fascination with bird study, Mort showed an unusual interest in the class and attracted his teacher's attention. The following year, Mr. Barber asked that Leonard be placed in his zoology class and obtained permission for Mort to share his lunch periods with him. He told his student that entomology was a legitimate profession, and one spring Saturday he invited Mort to collect insects with him near his Rosell, N. J. home. Leonard described the impact this trip had on his career:

I accepted at once, although I had not the slightest idea of what doing so entailed. This experience proved so fascinating that I decided then and there—that I wanted, more than anything else, to become an entomologist (Leonard 1957).

Noting Leonard's continued enthusiasm for insect collecting, Mr. Barber stressed that Cornell was *the* school to attend if one really aspired to a career in entomology. At Barber's suggestion, Mort's family gave him a copy of *A Manual for the Study of Insects* by Professor Comstock and his wife Anna Botsford Comstock at Christmas, 1908. Mr. Barber then convinced the family that entomology could be a reasonably lucrative profession; they eventually consented for Mort to attend Cornell (6).

Years later, Leonard gave credit to Barber for charting the course of the rest of his life, and he kept "in constant touch with him until the very day of his [Barber's] death" (Leonard and Sailer 1960: 127). Several reprints that Mort

sent to his esteemed friend and teacher were fondly dedicated to his "Entomological Father."

#### Cornell, Comstock and Crosby

*The Undergraduate Years.*—Amidst the bustling activity in J. H. Comstock's department, even Leonard's first days on campus proved exciting. On September 24, 1909, the freshman approached another young student in the departmental library, then housed in Roberts Hall, asking: "Sir, could you tell me where I could find a copy of Aldrich's *Catalogue of North American Diptera*?" (7). After a moment, the surprised student told Mort that he too had an interest in the Diptera and had arrived in Ithaca only the day before. Together the two freshmen located a copy of the Aldrich catalogue and marvelled over the fascinating volume. The other young man was Charles P. Alexander, destined to describe more than 10,000 insect species and publish more than 1,000 papers on crane flies (Diptera: Tipulidae) in studies that continue today. Out of that chance meeting evolved several joint projects and two publications on crane flies during their freshman and sophomore years and arose a deep, life-long friendship.

Leonard's formal introduction to entomology was Professor Comstock's general lecture course. The textbook used was the *Manual* with which Mort already was well versed. Additional courses under J. C. Bradley (Systematic Entomology), G. W. Herrick (Economic Entomology), J. G. Needham (General Biology), A. D. MacGillivray (Systematic Entomology), and W. A. Riley (Medical Entomology and Parasitology) served only to pique Leonard's interest. He also benefitted from courses under other of Cornell's famous zoologists: Ornithology under A. A. Allen, Comparative Anatomy of Vertebrates under H. D. Reed, and Systematic Vertebrate Zoology under A. H. Wright (6). Leonard also had the opportunity of associating with students who later achieved some distinction in entomology: C. P. Alexander, R. N. Chap-

man, H. Dietrich, A. E. Emerson, H. E. Ewing, J. C. Faure, A. D. Funkhouser, S. W. Frost, S. A. Graham, G. H. Griswold, R. W. Harned, H. C. Hockett, H. B. Hungerford, H. H. Knight, H. Morrison, C. F. W. Muesebeck, E. M. Patch, H. Ruckes, R. C. Shannon, R. C. Smith, J. D. Tothill, J. R. Traver, and others I might have mentioned.

Cornell's faculty shared a camaraderie with their students, often entertaining them in their homes. Sunday night open house at the Comstock's, which Mort frequently attended, was a tradition. Edith Patch (quoted in Mallis 1971) described the student-faculty relationship:

My first impression of Entomological Cornell was that it was sort of a family with the faculty acting as older brothers to the graduate students and everybody loving the Professor and Mrs. Comstock better than they did anybody else and that Cornell was the friendliest group of people in the world.

For such a distinguished group there was, as Prof. Bradley noted, a surprising lack of jealousy:

In those early days, our Department was small enough so that the entire staff and graduate students could be sort of like a family. We all know each other well. . . . In so far as I have known, there were no jealousies—there was always harmony amongst the members of the staff (8).

Louis Agassiz Fuertes, the great bird artist, allowed Mort to accompany him to his studio to watch him paint; (6) Professor Bradley took Leonard with him to a December 1911 meeting of the New York Entomological Society. Mort also was privileged to participate in the Cornell Okefenokee Expedition as the first group of naturalists to explore that great southern Georgia swamp. Led by Bradley, other members of the expedition were C. R. Crosby (Cornell economic entomologist), A. H. Wright, W. D. Funkhouser (Headmaster of Ithaca's Cascadilla Preparatory School and specialist on the Membracidae), Lee Worsham (Georgia State Entomologist), and Leonard's fellow classmate Sherman C. Bishop, who later became State Zoologist of New York. During late May to mid-July 1912,



Fig. 2. Mort at Gutland Vineyards, Patras, Greece, Sept. 18, 1911. Courtesy of D. D. Leonard.

the group prepared hundreds of bird skins and thousands of insects. Mort brought back 5 closely pinned Schmitt boxes of flies after identifying some of them during a week's stopover at the U. S. National Museum in Washington (6). Van Duzee (1915) named in Leonard's honor a dolichopodid fly Mort had collected in the swamp, the first named of many insects bearing the specific name *leonardi*.

The love Mort had developed for insect collecting as an undergraduate can be shown by relating an incident that took place on a Mediterranean trip (Fig. 2) he made with his mother, his brother, and a Greek friend during the summer of 1911 between his sophomore and junior years. When the other members of the party were sightseeing in Algiers, the Leonard boys wandered off to collect insects in the city square park. Mort became so fascinated with collecting exotic species that he and Donald overstayed their time. A search party located them, but Mort

drew a sharp reprimand for delaying departure of the Martha Washington (4).

An obvious enthusiasm and aptitude for entomology brought Leonard into a close relationship with the department head, Prof. Comstock. When Leonard reported for his first class in the fall term of 1911, Dr. Riley informed him that the Professor wanted to see him in his office. Comstock had received a call from L. O. Howard, Chief Entomologist of the U. S. Department of Agriculture in Washington, who explained that Col. Gorgas urgently needed an entomologist to assist in malaria control in order to protect those working to build the Panama Canal. Anyone Comstock recommended could have the position. The man Comstock chose was Leonard, after first checking with Riley to see whether Mort had satisfactorily completed his Medical Entomology and Parasitology course. Leonard considered the offer overnight, then decided to decline; he appreciated the compliment to his ability, but he did not want anything to interfere with his obtaining a Cornell degree (6). At the completion of the spring term in 1913, the University awarded him a B.S. degree.

*The Graduate Years.*—At the urging of some of his professors, Leonard decided to stay at Cornell to pursue a Ph.D. Although his research (a revision of the dipterous family Rhagionidae of America north of Mexico) was begun under Professor Bradley and completed under O. A. Johannsen, Mort's graduate years were influenced more by an economic entomologist and spider taxonomist, C. R. Crosby.

Late in 1913 Leonard found several large notebooks in the Agriculture Library that contained clippings of short articles written by Prof. Mark V. Slingerland, who had died in 1909 at the age of 45. Leonard showed his find to Crosby, who then told Comstock about the discovery. Comstock considered the clippings to represent valuable information on injurious insects of New York State, and since Slingerland's writings were scattered in various popular magazines

and in newspapers, he suggested that if Mort were interested in compiling them for publication, he would furnish a photograph of Slingerland and write an introductory biographical sketch (6). Thus, Leonard published in 1914 "A Bibliography of the Writings of Mark Vernon Slingerland," consisting of titles of more than 800 articles published mainly in the *Rural New-Yorker*. Apparently Crosby and Leonard had hoped to complete and publish an index to the Experiment Station literature of entomology, a project begun earlier by Prof. Slingerland. The Comstock Memorial Library at Cornell contains five bound volumes of Slingerland, Crosby, and Leonard's "Index to Experiment Station Literature, 1888 to 1913," the first two volumes dated 1915, the last three, 1916. For some reason this extensive compilation was never published.

Leonard further became involved in the practical aspects of entomology when he began to work with Crosby to control the tarnished plant bug as a pest of peach nursery stock, part-time at first so he could continue his graduate studies. During the summers of 1913-15, he worked at Chase Brothers Nursery, a grower of fruit nursery stock and large importer of plant material, at Honeoye Falls, N. Y. In 1914 federal funds became available for extension work, and Leonard was appointed as assistant extension entomologist under Crosby during 1915-16. Together they described as new several chalcidoid wasps that parasitized economically important insects, published various bulletins relating to control of fruit pests, and their model bibliography of the tarnished plant bug, which contained 315 titles. Their joint publications culminated in a 1918 book on vegetable garden insects.

The teacher and student remained close friends long after Mort left Cornell. A series of letters from Crosby to Leonard, written daily or every few days while the professor was on an extended collecting trip through the south and west, reveals the depth of their relationship. In his first letter to Mort, dated February

22, 1936, and extracted by Osborn (1946), Crosby wrote:

By this time you must realize that I am not merely writing you letters but keeping a diary. I never could keep a diary because I had no audience. By doing it this way I may be able to keep a record of the trip. I hope you find it of some interest. In spite of the bad weather we are getting a lot of stuff. Wish you were along.

Perhaps more important than the Crosby-Leonard publications was the method they helped devise for translating results of research work into practical use by farmers. With plant pathologists and other members of the Cornell extension group, they developed a spray service for the commercial fruit growers of the state. Special assistants of the New York State Food Supply Commission were placed in the field, beginning in Monroe and Niagara counties in 1917, to show the growers how and when to apply various insecticides and fungicides. This idea, soon copied by other states, helped growers reduce their losses to insects and disease and represented one of this country's first successful extension programs in entomology and plant pathology (2).

Despite the considerable influence of Prof. Crosby and the time-consuming work on control of the tarnished plant bug, Leonard must have initiated several of his own projects. During 1915-16, he managed to publish 4 papers containing descriptions and illustrations of the immature stages of plant bugs and leafhoppers, some of the first North American work on immatures of the Miridae and Cicadellidae. Some of his illustrations were used by Prof. Comstock in his 1918 treatise on the wings of insects. It was in this period that Leonard become interested in the plan to publish a list of New York State insects. J. C. Bradley was named Editor-in-Chief; the leading specialists in the major groups of insects were to serve as sub-editors.

Emergency extension work often took Leonard away from campus during the later years of his graduate studies. For short periods he worked on control of vegetable pests at Pennsylvania State

College's Erie County laboratory in 1918, on truck crop insects on Long Island in 1919, and with Prof. Robert Matheson of Cornell on the European corn borer in Massachusetts in 1920. On October 28, 1918, shortly after he returned from his stay in Pennsylvania, Mort married Doris Gardner Pratt (Fig. 1), a former secretary at Cornell and daughter of the production manager of the *Ithaca Journal*.

Perhaps Crosby now thought his assistant had prolonged his graduate work long enough; he urged Leonard to complete his dissertation so he would be available to accept job offers (9). Leonard was awarded his Ph.D. in February 1921.

#### Entomological Jack-of-All-Trades

*Off the Beaten Path.*—In late 1921 Bowker Chemical Co. of New York City offered the new graduate the opportunity to direct its field research in the eastern states. To leave Cornell for industry was a radical step since Leonard perhaps was only the second well-trained member of his profession to enter the commercial field. Leonard credits Otto H. Swezey with being the first graduate entomologist to serve a profit-making organization (Leonard 1958). The new job subjected Leonard to ridicule from his colleagues in official positions who made it known that Mort had compromised his principles. Years after his move to Bowker, he wrote: "Few but the older entomologists can realize today the feeling which prevailed in this matter 25 or 30 years ago" (Leonard 1946). So great could be the opprobrium that J. G. Sanders (first State Entomologist of Wisconsin and later director of Pennsylvania's Bureau of Plant Industry), who joined the Sun Oil Co. in the early 1920's, felt compelled to respond to his tormentors: ". . . an economic entomologist still retains his identity and worth, irrespective of the source of his remunerations . . . ." (Sanders 1925).

As Bowker's director of field research Leonard was to determine new uses for an old copper-arsenical compound that had recently been modified. In cooperation with land-grant colleges in several

eastern states he planned and carried out experiments with the new material on apples, potatoes, and other crops. In April 1923 he left to re-enter official entomology.

When New York's State Entomologist E. P. Felt was temporarily transferred to the State Conservation Department, Leonard was appointed Acting State Entomologist. At this time the editorial board of the New York Insect List was revised and Leonard succeeded Bradley as Editor. Among Mort's other duties in Albany was the investigation of the state's injurious and beneficial insects. When Felt returned, Leonard was appointed and sent to Spain as special investigator by the New York Fruit Exchange to determine the conditions surrounding the USDA's embargo against Almeria grapes infested with Mediterranean fruit fly.

*Back to Cornell.*—His assignment in Spain completed, Leonard returned to Cornell in December 1924 to see the New York Insect List through to completion as its Editor-in-Chief. He also wrote two fascicles for the List: Families Xylophagidae, Coenomyiidae, and Rhagionidae (Diptera) and (with A. B. Gahan and Crosby) the Superfamily Chalcidoidea (Hymenoptera). Mort truly delighted in seeing the insect fauna of his home state documented. In studies on chrysomelid beetles under Prof. Matheson, T. L. Bissell collected a rare species and recalls Mort's elation at having a new addition to the List (10). All possible sources of records were explored. As an example, he spent considerable time rummaging through W. T. Davis' attic in search of records of Long Island and Staten Island insects (Abbott 1949). The project was completed in 1925, but it was not until 1928 that the List was published as Cornell Memoir 101. With its more than 16,000 insects and related arthropods, the List remains as the most comprehensive work on the insect fauna of any geographic region in North America. More than 150 scientists had collaborated to do the collecting and taxonomic study necessary to complete the project.

*Retreat from Blind Alleys.*—Again Leonard had to leave Ithaca; once again, as F. L. Campbell aptly described (2), he was forced off the beaten path to explore this way and that, often having to retreat, never becoming entrenched in a permanent position. During 1925–27 Leonard conducted field experiments relating to control of citrus and vegetable pests for the Florida Agricultural Supply Co. of Orlando, a position similar to the one he had held with Bowker Chemical. For part of this period Leonard also worked for the Wilson & Toomer Fertilizer Co. of Jacksonville. In August 1927 he returned to Ithaca for a few months as a special agent in the joint Cornell-USDA campaign to clean up infestations of European corn borer.

The campaign completed, Leonard returned to industry, this time as research entomologist with Tobacco By-Products and Chemical Corporation of Louisville, Kentucky. He was stationed at Wenatchee, Washington, to test insecticides for control of codling moth. In slightly more than a year the experimental work was completed; Mort soon was back to official entomology.

*Basic Biology Again.*—In January 1930 Leonard became Chief of the Division of Entomology at Puerto Rico's Insular Experiment Station at Rio Piedros (Fig. 3). His duties were broad: to make general insect surveys and to investigate the control of insect pests of all crops grown on the island. Here Leonard was able to return to active publishing. He had published his first paper as a sophomore at Cornell and by the time he received his Ph.D. his scientific contributions numbered more than 30. But in nearly a decade away from Ithaca, mainly in industry, he had published fewer than 10 papers, most of those during his editorship of the New York list of insects. At the Insular Experiment Station he was able to carry out basic life history studies similar to those he and Crosby had conducted at Cornell. Leonard and his co-workers studied the biology of the lima bean pod borer, bean lace bug, pink bollworm, cottony cushion scale,

sugar cane borer, a lepidopterous leaf-miner of cotton, a root weevil of cassava, a coreid bug that injures citrus, papaya fruit fly, as well as other species. The annotated bibliography of Puerto Rican entomology published by Leonard (1933) lists 38 of his own titles, only 7 of them with a co-author. With political changes in the insular government in late 1932, Mort was left without a position.

After working for a month or so as a consulting entomologist for United Chemical and Exterminating Co. of New York City, Leonard settled into relative security as a research entomologist for the John Powell Co. of New York. For 5-½ years he was stationed in Florida to conduct tests with pyrethrum and rotenone in control of vegetable and other crop pests.

His next three positions were short-lived: entomologist in charge of Du Pont's pest control exhibit at the New York World's Fair (Feb. 1939–Nov. 1940), and entomologist with Angier Products of Cambridge, Massachusetts (Dec.



Fig. 4. Mort near his Dorchester House apartment, spring 1948. Courtesy of D. D. Leonard.



Fig. 3. Mort in Puerto Rico, ca. 1930. Courtesy of D. D. Leonard.

1940–May 1941), and then with the Orange Manufacturing Co., Orlando, Florida (May–Oct. 1941). From December 1941 to late 1945 he served as business analyst for the Office of Price Administration and was in charge of price controls for insecticides during World War II. His residence at Dorchester House, 2480 Sixteenth Street NW (Fig. 4), about a mile north of the White House, would be his home for more than 30 years and would become the site of many "yellow-pan" collections of aphids.

*Looking for Security.* — After the war Leonard sought security with the U. S. Bureau of Entomology and Plant Quarantine, then under the direction of E. R. Sasser who had succeeded C. L. Marlatt. He was assigned to Sasser to help collect data on exotic insect pests, which if introduced into the U. S., would prove the greatest threat to our agriculture. Sasser intended for the Bureau to publish on all foreign insect pests that might enter the country, a work that would



supersede the well-known manual published by W. D. Pierce (1917). Leonard helped prepare a draft of a manuscript treating exotic pests of cruciferous crops (11), but even this first part of the intended series was never published. Funds for the project had been depleted; Leonard was dropped from the payroll in 1947.

As noted by Campbell: "It is a tribute to his reputation and ability that at the age of 57 he was promptly employed by another insecticide manufacturer for developmental work (2)." In October 1948 Leonard joined the Julius Hyman Co. of Denver, Colorado, to aid in developing uses for new hydrocarbon insecticides in the eastern states. Shell Chemical Co. purchased Julius Hyman in 1952, acquiring exclusive rights to the compounds aldrin and dieldrin. In his position Leonard cooperated with numerous workers in state, federal, and foreign governments and functioned as an "Entomological Diplomat" in planning overseas uses for his company's insecticides and dealing with various agencies such as the Foreign Health Division of the U. S. Public Health Service, the Institute of Inter-American Affairs, and the Pan-American Sanitary Bureau. As an example of his involvement with foreign countries, he was instrumental in shipping to Egypt two airplanes loaded with insecticides to combat a locust plague. The promptness of his and Shell's action helped save most of the cotton crop (12). Upon his retirement in July 1961, Shell honored Dr. Leonard "... for his integrity as a scientist and for his many contributions to advance the interests of entomology and his fellow entomologists" (13).

#### Entomologist to the End

*Aphids on a Rooftop*—Leonard had not yet developed an interest in aphids when, on his return to Ithaca from the 1912 Okefenokee Expedition, he stopped at Plummers Island, Maryland to collect with H. S. Barber, W. L. McAtee, E. A. Schwarz, and H. L. Viereck (Leonard 1966). We know, however, that by 1916 he had begun to collect aphids; he sent a

letter to Edith Patch informing her of a collection he had made from golden seal. Her reply of September 1, 1916, cited by Mallis (1971) to capture the "flavor of her personality," was essentially a reprimand to Leonard for his careless packing of the vials containing the specimens. The zeal with which Mort later was to pursue studies of aphid distribution was the result of a reunion with Crosby during a short vacation at Cornell in the fall of 1932. At Crosby's suggestion, Mort did some collecting in the Ithaca area and was impressed with the diversity of the aphid fauna. The recently published work on Illinois aphids (Hottes and Frison 1931) further stimulated Leonard's interest in the group. Separately and together Crosby and Leonard collected aphids until the Professor's death in 1937 (Leonard 1963). Mort published their new records of New York species in a 1937 paper, the first of his more than 50 papers on aphids.

Although he had begun to collect aphids in the Washington area in 1945, it was not until the mid-1950's that he concentrated on the group. As consulting entomologist with Shell Chemical Co., he had time to operate a Moericke ("yellowpan") trap on the roof of his 9-story apartment building and accumulate records of the local fauna. Every six months or so, he and his wife Doris would visit her niece (Mrs. David Winters) in Haddonfield, N. J., and invariably Mort would set up his trap in the Winters' yard (14). Some members of the prestigious Cosmos Club in Washington must have looked askance when Mort collected from plants in the club's gardens. For Mort there was always time for collecting:

If one keeps at it as he travels, a great deal of valuable stuff can be gotten by dropping by for a few minutes at a likely spot, or during noon hour or after supper as well as on Sundays & occasional holidays. Anyone who really wants to collect . . . can find time even tho busy with other matters" (15).

Leonard constantly encouraged his friends to collect aphids for him and, if they neglected to send specimens, he would remind them to be more diligent (9).

Roy Latham, a close friend and long-time naturalist on Long Island, made numerous collections of aphids from accurately determined host plants; Prof. L. L. Pechuman collected two new species of New York aphids and contributed many new state records; and C. P. Alexander and others also submitted numerous collections to Mort. It should be pointed out that Leonard was not a taxonomic specialist in the Aphididae and did not describe new species as he had for the Diptera and Hymenoptera earlier in his career. He did make many of his own identifications but usually submitted specimens to specialists for verification of his tentative determinations. Many of the world's aphid authorities were called on for assistance: T. L. Bissell, V. F. Eastop, M. E. MacGillivray, A. T. Olive, J. O. Pepper, F. W. Quednau, A. G. Robinson, L. M. Russell, C. F. Smith, H. L. G. Stroyan, and A. N. Tissot.

Through Mort's own collecting and his encouragement of others, our knowledge of the aphid fauna of New York is better known than that of any other state, with some 462 species having been recorded up to publication of his fourth supplement in 1975. He also published distribution records for the aphids of Arizona, California, Connecticut, Delaware, District of Columbia, Hawaii, Maryland, Massachusetts, Missouri, New Jersey, Oregon, Texas, Vermont, and Virginia, as well as Cyprus and Newfoundland.

*The Last Years.*—Mort remained an active entomologist until his final months; his ambition seldom waned. Even in his later years he still had hopes for finishing a supplement to his New York Insect List (15); he still mentioned the possibility of publishing sketches of entomologists he felt had been neglected (C. H. Hadley and J. G. Sanders for example) (16); and he was still having aphids sent to him. Less than a month before he died, he turned over to Prof. Pechuman the notes that were to comprise a fifth supplement to his New York list of aphids

and asked him to oversee the typing of the manuscript (17).

When Doris' health began to fail, the Leonards moved to a Cherry Hill, N. J. nursing home in early August 1975. With his own health also beginning to decline and without the opportunity of daily telephone chats with his Washington friends and occasional visits to the Cosmos Club, Mort may literally have died of a broken heart. He died on August 26, 1975 and was buried in the family plot in Ridge-wood, N. J. Doris died soon after on February 29, 1976.

#### Evaluation of a Career

Mortimer D. Leonard's more than 170 publications in insect biology, distribution, and control; in extension work; and on new uses of insecticides attest to a long and diverse career. He had the opportunity to be part of the Comstock years at Cornell and to associate with some of the greatest scientists in his field and to be active both in basic and applied research in official and commercial positions. His outstanding achievement probably was overseeing the completion of the New York State List of Insects. Such an ambitious compiling of a state's insect fauna may never again be attempted. The List is an invaluable reference for insect distribution records and, in a lighter vein, it inspired the long-running column "Autographa OO" by the editor of the *Bulletin of the Entomological Society of America*. Mort delighted in the explanation of how the name for the column (loosely expressed as "Oh! Oh! What have I written"! ) was derived (with apology to grammarians) from the noctuid moth, *Autographa oo*, on page 627 of the List (18).

In economic entomology the development and testing of new agricultural insecticides was an outstanding contribution, although no single accomplishment or publication commemorates his developmental work. F. L. Campbell credits Mort with benefitting peoples the world over:

There is no question . . . that the present effectiveness of chemical control of insects can be

attributed to the effort over the years of Dr. Leonard and men like him. To a considerable extent credit for this great development in food production should go to Dr. Leonard who has been a pioneer and leader in this field (2).

According to Leonard's own estimate, 40% of his time was spent in "official" entomology, 60% in "commercial" positions (Leonard 1957). He declined to select either as the more enjoyable, although he was justly proud of being one of the first well-trained entomologists to serve industry. He traced the development of commercial entomology in the United States (Leonard 1958) and, according to one of Mort's closest friends, the preparation of the paper truly was a labor of love (19).

But did Dr. Leonard fulfill the promise he showed as a taxonomist and general biologist during his student years at Cornell? Would Prof. Comstock and his friend and adviser Cyrus Crosby have been pleased with their student's accomplishments? Comstock might well have been disappointed that Mort so soon abandoned his life history and taxonomic studies and only briefly returned to biological investigations. As a pioneer in extension entomology, Crosby probably would have been pleased to see Mort develop new uses for agricultural chemicals which resulted in improved public health and increased food production throughout much of the world. He certainly would have been pleased to see Mort continue his studies on aphids.

In fairness to Leonard it should be emphasized that his wanderings were not intended, that a career characterized by an absence of stepwise progression was not planned (2). Sometimes he simply was the victim of bad luck. At various times political tampering (Puerto Rico), business failure (Orange Manufacturing Co.), and termination of funds (U. S. Bureau of Entomology and Plant Quarantine) cost him his position. In other cases Mort's own actions may have kept him from securing permanency in a certain job. One of Leonard's compelling desires was to return to Cornell, and Prof. Crosby indeed tried (unsuccessfully for reasons

not known) to obtain a permanent faculty position for his friend (9).

For an entomologist as well known and admired as Leonard was, one might expect him to have held office in the many societies to which he belonged. His frequent shifting of positions and the extensive travel required by his developmental work in industry probably prevented him from holding office. In his later years he enjoyed counting ballots for the Entomological Society of America at their headquarters in College Park, Maryland (20), and he regularly attended meetings of the Entomological Society of Washington. In February 1975 he was elected to Honorary Membership in the Washington society.

In an evaluation of Leonard's work one should not be too critical of a career so diverse and fruitful. Earlier I referred to him as an "entomological jack-of-all trades," not disparagingly, but as a compliment to his achievements in several areas of his science. Perhaps his productivity (however that might be measured) would not have been enhanced had he remained at Cornell. Certainly he would never have had the opportunity to make such lasting contributions to world food production. In the end, what others thought of his productivity matters less than how Mort viewed his life's work. Clearly he enjoyed it:

As I look back over the years, it seems to me that being an entomologist has been a very rewarding way of life. I have travelled widely and met hosts of interesting people, including many from foreign lands, and I have made many valued friends. I believe my activities have been of benefit to my fellow man (Leonard 1957).

#### Mort Leonard the Man

Russell's (1975) obituary of Dr. Leonard provides good insight into his personality. She described him as "kind, cordial, sociable, communicative, and intensely interested in people and their activities." Mort seldom failed to add a personal touch; nearly always he remembered his friends' anniversaries and birthdays (9). At the close of my graduate work at Cornell, Dr. Leonard learned that I had scheduled my "defense of the-

sis" exam and took time to send a letter wishing me success.

When Mort's father died, he became and would remain a "tower of strength" (21) to his younger brother Donald and an affectionate son to his mother. Although he was seldom home after he enrolled at Cheshire Academy, he helped his mother when he could and did his best to return for high days (the Leonard's were Episcopalian) and holidays (5).

At Cornell Mort enjoyed a social life apart from activities associated with the Entomology Department and lectures and field trips of the Agassiz Club. He was a member of Eleusis, a local fraternity that was merged into the national Theta Kappa Nu and then into Lambda Chi Alpha. Mort was a great storyteller and, like his father, had a flair for mimicking a Jewish and a Spanish dialect. He often was called on to entertain his fraternity's "rushees"; he had some of his mother's musical ability and was a good "fiddler" (21). In the Agriculture College Mort was a member of the Violin Quartet and the Mandolin Club. Sometimes he made a small sum of money by playing at local dances. Over the years he sang and interpreted some of the humorous songs that his Aunt Neil, his mother's younger sister, had handed down (22).

A write-up prepared for the 1913 Cornell classbook vividly characterizes Mort the student:

We call him "Bug" Leonard because of his proclivities not because of his state of mind. Despite his habitual church-deacon expression, Mort can, on occasion, give a very correct imitation of "The Missing Link." He is perfectly at home with his pipe and his "bugs," a master stuntster, and a charter member of the Bachelors Club (23).

To really capture the flavor of Mort's personality, more should be said about Cornell. When he finished his doctoral work, Leonard probably wanted to remain on the Cornell staff. Despite the disappointment of failure to land a permanent position, Mort always cherished memories of his years in Ithaca and relished the opportunity to visit with Cornell alumni. In 1967 he donated to Cornell his personal collection of aphids con-

sisting of some 500 species and nearly 17,000 slides. Leonard's collection, together with the aphids assembled by former Cornell entomologist Grace H. Griswold, is known as the "Griswold-Leonard Collection of Aphididae" (Pechuman 1969). Shortly before he died, Leonard gave his books, reprints, reprint collection, diplomas, and microscope to the University (9).

Although not physically impressive (he was 5'7" tall and weighed 125 lbs. as a Cornell student) (23), Mort was a handsome man, bearing (some thought) a resemblance to the actor Adolph Menjou. He was always well dressed, even dapper (Fig. 4); above all, he was a gentleman.

Like many entomologists, Leonard was not without his quirks. At times he could be stubborn. In restaurants his second cup of coffee had to be brought in a *clean* cup (20), and on his 50th reunion at Cornell he insisted on retracing his original route to Ithaca. Since train service was no longer available to Ithaca, Prof. Pechuman met Mort at the railroad station in Binghamton to take him and Doris to his reunion (9).

In short, Mort Leonard was a convivial, gregarious sort. Robert Hamman perhaps said it best: "Mort never met a stranger, only friends" (19).

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#### New Names Proposed by M. D. Leonard

##### Hemiptera-Homoptera

###### Cicadelloidea-Idioceridae

- Idiocerus gemmisimulans* Leonard & Crosby 1915, J. Econ. Entomol. 8:542 (a synonym of *I. decimaquartus* (Schrank)).

##### Diptera

###### Tipulidae

- Geranomyia bezzii* Alexander & Leonard 1912, Can. Entomol. 54:205.
- Limnophila albipes* Leonard 1913, Entomol. News 24:248 (listed as an unplaced species of *Limnophila* by Alexander 1965).
- Limnophila nigripleura* Alexander & Leonard 1914, in Alexander, Proc. Acad. Nat. Sci. Phil. 66:592 (a synonym of *Pseudolimnophila contempta* (Osten Sacken)).

###### Xylophagidae

- Rachicerus niger* Leonard 1930, Mem. Amer. Entomol. Soc. 7:13.

###### Xylomyidae

- Xylomyia pallipes* Loew var. *flavomaculata* Leonard 1930, Mem. Am. Entomol. Soc. 7:43 (a synonym of *Solva pallipes* (Loew)).

###### Rhagionidae

- Chrysopilus andersoni* Leonard 1930, Mem. Am. Entomol. Soc. 7:131.
- Chrysopilus fasciatus* var. *infuscatus* Leonard 1930, Mem. Am. Entomol. Soc. 7:141 (a subspecies of *C. fasciatus* (Say)).
- Chrysopilus pilosus* Leonard 1930, Mem. Am. Entomol. Soc. 7:152.
- Ptiolina alberta* Leonard 1931, in Curran, Can. Entomol. 63:250.
- Ptiolina obsoleta* Leonard 1931, in Curran, Can. Entomol. 63:250.
- Rhagio brunneipennis* Leonard 1930, Mem. Am. Entomol. Soc. 7:92.

- Rhagio californicus* Leonard 1930, Mem. Am. Entomol. Soc. 7:93.

- Rhagio concavus* Leonard 1930, Mem. Am. Entomol. Soc. 7:94 (a subspecies of *R. maculifer* (Bigot)).

- Rhagio costatus* var. *limbatus* Leonard 1930, Mem. Am. Entomol. Soc. 7:96. (a synonym of *R. costatus* (Loew)).

- Rhagio pollinosus* Leonard 1930, Mem. Am. Entomol. Soc. 7:116.

- Symphoromyia algens* Leonard 1931, Am. Mus. Novitates 497:1.

- Symphoromyia currani* Leonard 1931, Am. Mus. Novitates 497:2.

##### Hymenoptera

###### Mymaridae

- Anagrus ovijentatus* Crosby & Leonard 1914, Can. Entomol. 46: 181 (now placed in the genus *Anaphes* Haliday).

- Gonatocerus ovicenatus* Leonard & Crosby 1915, J. Econ. Entomol. 8:545 (now placed in the genus *Lymaenon* Haliday).

###### Eulophidae

- Tetrastichus ovipransus* Crosby & Leonard 1917, Entomol. News. 28:368.

#### Species Named in Honor of M. D. Leonard

##### Acarina

###### Tarsonemidae

- Hemitarsonemus leonardi* Smiley 1967

##### Odonata

###### Gomphidae

- Gomphus mortimer* Needham 1943 (a synonym of *G. descriptus* Banks)

##### Hemiptera-Homoptera

###### Aphididae

- Calaphis leonardi* Quednau 1971
- Uroleucon leonardi* (Olive 1965) (described in *Dactynotus*)

##### Coleoptera

###### Mordellidae

- Mordellistena leonardi* Ray 1946

##### Diptera

###### Tipulidae

- Rhabdomastix leonardi* Alexander 1930
- Shannonomyia leonardi* Alexander 1932

###### Dolichopodidae

- Condylostylus leonardi* (Van Duzee 1915) (described in *Sciapus*)

###### Tachinidae

- Trochilodes leonardi* (West 1925) (described in *Rhamphina*)

##### Hymenoptera

###### Scelionidae

- Trimorus leonardi* Fouts 1948

###### Platygasteridae

- Inostemma leonardi* (Fouts 1925) (described in *Acerota*)

M. D. Leonard: Membership in Scientific Societies  
 American Association of Economic Entomologists, Elected 1911  
 American Association for the Advancement of Science  
 Brooklyn Entomological Society, 1943  
 Entomological Society of America, 1910  
 Entomological Society of Japan, 1957  
 Entomological Society of Washington, 1921—Elected to Honorary Membership, February 1975  
 Florida Entomological Society  
 New York Entomological Society, 1921  
 Sigma Xi, 1915  
 Texas Entomological Society, 1933  
 Washington Academy of Sciences, 1958

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#### Footnotes

- (1) Adjunct Assistant Professor of Entomology. The Pennsylvania State University, University Park, PA 16802.
- (2) Letter dated May 31, 1952, from F. L. Campbell to Committee on Admissions, Cosmos Club, Washington, D. C.
- (3) Letter dated February 27, 1978, from Donald D. Leonard to A. G. Wheeler, Jr.
- (4) Letter dated January 27, 1977, from Donald D. Leonard to A. G. Wheeler, Jr.
- (5) Letter dated January 18, 1978, from Donald D. Leonard to A. G. Wheeler, Jr.
- (6) "Why I Went to Cornell," notes provided by M. D. Leonard, March 29, 1975, in a letter to E. H. Smith, Chairman, Department of Entomology, Cornell University; on file in Comstock Memorial Library, Cornell.
- (7) Letter dated January 7, 1977, from Charles P. Alexander to A. G. Wheeler, Jr.
- (8) Interview with J. Chester Bradley, December 18, 1962, by Gould P. Colman, Archivist, Department of Manuscripts and University Archives,

- Cornell University; transcript on file in Comstock Memorial Library, Cornell.
- (9) Personal communication with L. L. Pechuman, Department of Entomology, Cornell University.
  - (10) Letter dated December 17, 1977, from T. L. Bissell to A. G. Wheeler, Jr.
  - (11) Personal communication with P. M. Schroeder, USDA-APHIS, PPQ, Hyattsville, Md.
  - (12) Letter dated April 17, 1978, from Donald D. Leonard to A. G. Wheeler, Jr.
  - (13) Shell Chemical Agricultural News, New York, N. Y., August 1961.
  - (14) Letter dated January 13, 1978, from Mrs. David Winters to A. G. Wheeler, Jr.
  - (15) Letter dated January 22, 1945, from M. D. Leonard to L. L. Pechuman.
  - (16) Letter dated April 26, 1975, from M. D. Leonard to A. G. Wheeler, Jr.
  - (17) Letter dated July 30, 1975, from M. D. Leonard to L. L. Pechuman.
  - (18) Personal communication with R. H. Nelson, Mechanicsburg, Pa. (formerly Executive Secretary, Entomological Society of America); see "Autographa OO," inside front cover, Bull. Entomol. Soc. Am., Dec. 1968.
  - (19) Personal communication with Robert E. Hamman, Greensboro, N. C.
  - (20) Personal communication with R. H. Nelson, Mechanicsburg, Pa.
  - (21) Letter dated December 1, 1976, from Donald D. Leonard to A. G. Wheeler, Jr.
  - (22) Letter dated January 7, 1977, from Donald D. Leonard to A. G. Wheeler, Jr.
  - (23) From Alumni Office records, Cornell University, Ithaca, N. Y.